

**Notice of Allowability**

Application No.

10/049,689

Examiner

Kripa Sagar

Applicant(s)

GAILLARD ET AL.

Art Unit

1756

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/1/04 & 12/6/04.
2. ☒ The allowed claim(s) is/are 1,2,4-6,8,9,11,13-18,20,22-24 and 26-32.
3. ☒ The drawings filed on 01 October 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment filed 10/1/04 has been entered. Claims 1, 4, 8, 13, 16, 20, and 26 have been amended, claims 27-32 have been added, and claims 7, 10, 12, 19, 21, and 25 have been canceled. No new matter has been introduced by the amendment. Claims 1-6, 8, 9, 11, 13-18, 20, 22-24, and 26-32 are now under consideration.

### ***Drawings***

2. The drawings were received on 10/1/04. These drawings are accepted.

### ***Claim Rejections***

3. All claim objections and rejections presented in the earlier office action have been overcome by the amendment; accordingly the objections and rejections are withdrawn.

## **EXAMINER'S AMENDMENT**

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

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Authorization for this examiner's amendment was given in a telephone interview with Attorney Roger Barrett on 12/6/04.

The application has been amended as follows:

**In the claims:**

Cancel Claim 3

Claims 1,2,4-6,8,9,11,13-18,20,22-24 and 26-32 are under consideration.

***Allowable Subject Matter***

5. Claims 1,2,4-6,8,9,11,13-18,20,22-24 and 26-32 are allowed.

6. The following is an examiner's statement of reasons for allowance: The amended independent claims recite pore formation adjacent the ARC and removal of the pores in the trench fill material.

This is not taught by the cited references.

Applicant cited reference US Pat.5786262 to Jang et al. teaches densification of an O3-TEOS trench-filling oxide by thermal annealing; this is also admitted prior art. The process implicitly involves pore removal throughout the body of the filler. Applicant appears to argue that the instant claimed pore removal is different and localized near the ARC. It is removed by CMP (fig.8,9). Examiner concurs with the argument.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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***Response to Arguments***

7. Applicants arguments and remarks were considered. Issue of pore formation and removal recited in the independent claims was further discussed on the phone on 12/6/04. Applicant has argued that the problem addressed is not the conventional densification of dielectrics by pore removal but the removal of localized pores, formed near the ARC, by CMP. The argument is convincing.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kripa Sagar whose telephone number is 571-272-1392. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
MARK F. HUFF  
SUPERVISOR  
TECHNOLOGY CENTER 1700